

NOAAFISHERIES

Alaska
Fisheries
Science Center
Auke Bay
Laboratories
Juneau, Alaska

Introduction to Data Management; Collection, Sharing, and Hosting

5th FiSCAO ToR 4

Fifth Meeting of Scientific Experts on Fish Stocks in the Central Arctic Ocean

Ottawa, Canada

October 26, 2017

Evolution of Data Management Terms of Reference in FiSCAO

(2015) 3rd FiSCAO ToR 1:

... establishing an inventory of research and monitoring programs and preparing a report on the status of and gaps in knowledge on the distribution and abundance of fish in the central Arctic Ocean. ... and ... immediately adjacent shelf areas ...

(2016) 4th FiSCAO ToR 1:

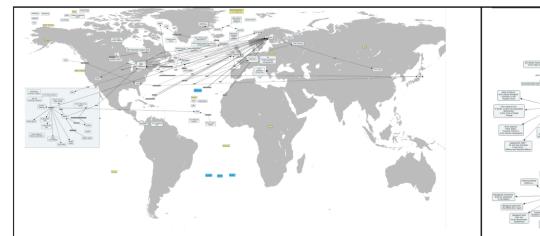
Complete the synthesis of knowledge ... call for existing data and analyses of the CAO from science organizations of the parties. ... identify the priorities for research and monitoring gaps.

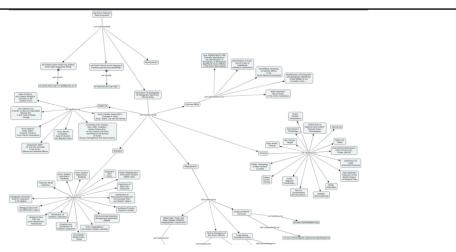
(2017) 5th FiSCAO ToR 4:

Develop data collection, sharing, and hosting protocols that outline the details of what and how data shall be collected, shared, and hosted for consideration by the Parties.

3rd FiSCAO ToR 1: Connecting to IASC-SAON Arctic Data Committee

Mapping the Arctic Ocean Fisheries Data Ecosystem: using network science and linked data to enhance data access





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4th FiSCAO ToR 1:

Complete the synthesis of knowledge ... call for existing data and analyses of the CAO from science organizations of the parties ...

FiSCAO Fish Database, 9,405 records (2016) species by lat long

ables <u></u>									
Table 1. Species of fish documented to occur within the High Seas area identifying the species									
with potential for future commercial harvests									
Table 1.1 Sampling sites for fish species on the High Seas of the central Arctic									
Table 1.2. Fish species of documented occurrence in LMEs adjacent to the High Seas									
presented in alphabetical order by family and scientific name with common name and status									
of commercial potential									
Table 1.2A. Invertebrate species of documented occurrence in LMEs adjacent to the High Seas									
presented in alphabetical order by family and scientific name with common name and status									
of commercial potential.									
Table 1.3. Alphabetical List of Fish and Invertebrates Species Known from Waters Surrounding									
the High Seas of the Central Arctic									

Arctic Fish Species Locality Data

	Α	В	C	D	E	F	G	Н	1	J	K	
	N Species	Binomial	XCAO	Comm	Lat	Long	Reference & Station	<u>LME</u>	Family	Common name	Depth r	n
5	15	Liparis fabricii	Yes	No	74 29.86 N	169 00.08 W	Lin et al. 2012 SR12	CenArctic	Liparidae	Gelatinous seasnail	177	Fre
	15	Liparis fabricii	Yes	No	73 59.69 N	168 59.25 W	Lin et al. 2012 SR11	CenArctic	Liparidae	Gelatinous seasnail	170	Tri
'	15	Liparis fabricii	Yes	No	83 N	177 W	Melnikov, 1997 NP-22	CenArctic	Liparidae	Gelatinous seasnail	??	??
3	15	Liparis fabricii	Yes	No	88 N	126 E	Melnikov, 1997 NP-25	CenArctic	Liparidae	Gelatinous seasnail	??	??
)	15	Liparis fabricii	Yes	No	74.4839 N	-165.9670 W	Mecklenberg et al T1 20:	CenArctic	Liparidae	Gelatinous seasnail	367	Ot
)	16	Lycodes adolfi	Yes	No	76.5515 N	-164.9670 W	Mecklenberg et al T1 203	CenArctic	Zoarcidae	Adolph's eelpout	584	Ot
	17	Lycodes adolfi	Yes	No	75 19.80 N	171 59.85 W	Lin et al. 2012 M06	CenArctic	Zoarcidae	Adolph's eelpout	580	Fre
2	18	Lycodes polaris	Yes	No	73 59.69 N	168 59.25 W	Lin et al. 2012 SR11	CenArctic	Zoarcidae	Canadian eelpout	171	Tri
	18	Lycodes polaris	Yes	No	70.2761 N	-176.6946 W	Mecklenberg et al T1 200	CenArctic	Zoarcidae	Canadian eelpout	58	Ot
ļ	18	Lycodes polaris	Yes	No	69.6968 N	-174.6196 W	Mecklenberg et al T1 203	CenArctic	Zoarcidae	Canadian eelpout	49	Ot
	19	Lycodes saggittarius	Yes	No	75 19.80 N	171 59.85 W	Lin et al. 2012 M06	CenArctic	Zoarcidae	Archer eelpout	580	Fre
	19	Lycodes saggittarius	Yes	No	74 59.68 N	172 01.87 W	Lin et al. 2012 M07	CenArctic	Zoarcidae	Archer eelpout	315	Fre
7	20	Lycodes seminudus	Yes	No	76.5515 N	-164.9670 W	Mecklenberg et al T1 203	CenArctic	Zoarcidae	Longear eelpout	584	Ot
3	20	Lycodes seminudus	Yes	No	74.4839 N	-165.9670 W	Mecklenberg et al T1 200	CenArctic	Zoarcidae	Longear eelpout	367	Ot
	21	Lycodes seminudus	Yes	No	75 19.80 N	171 59.85 W	Lin et al. 2012 M06	CenArctic	Zoarcidae	Longear eelpout	580	Fre
)	21	Lycodes seminudus	Yes	No	74 59.68 N	172 01.87 W	Lin et al. 2012 M07	CenArctic	Zoarcidae	Longear eelpout	315	Fre
l	22	Reinhardtius hippoglossoides	Yes	Yes	74.4839 N	-165.9670 W	Mecklenberg et al T1 200	CenArctic	Pleuronectida	Greenland halibut	367	Ot
	23	Reinhardtius hippoglossoides	Yes	Yes	74 59.68 N	172 01.87 W	Lin et al. 2012 M07	CenArctic	Pleuronectida	Greenland halibut	315	Fre
	24	Triglops nybelini	Yes	No	74.4839 N	-165.9670 W	Mecklenberg et al T1 200	CenArctic	Cottidae	Bigeye sculpin	367	Ot
	25	Triglops pingelii	Yes	No	70.2761 N	-176.6946 W	Mecklenberg et al T1 203	CenArctic	Cottidae	Ribbed sculpin	58	Ot
	25	Triglops pingelii	Yes	No	69.6968 N	-174.6196 W	Mecklenberg et al T1 203	CenArctic	Cottidae	Ribbed sculpin	49	Ot





Cottunculus microps

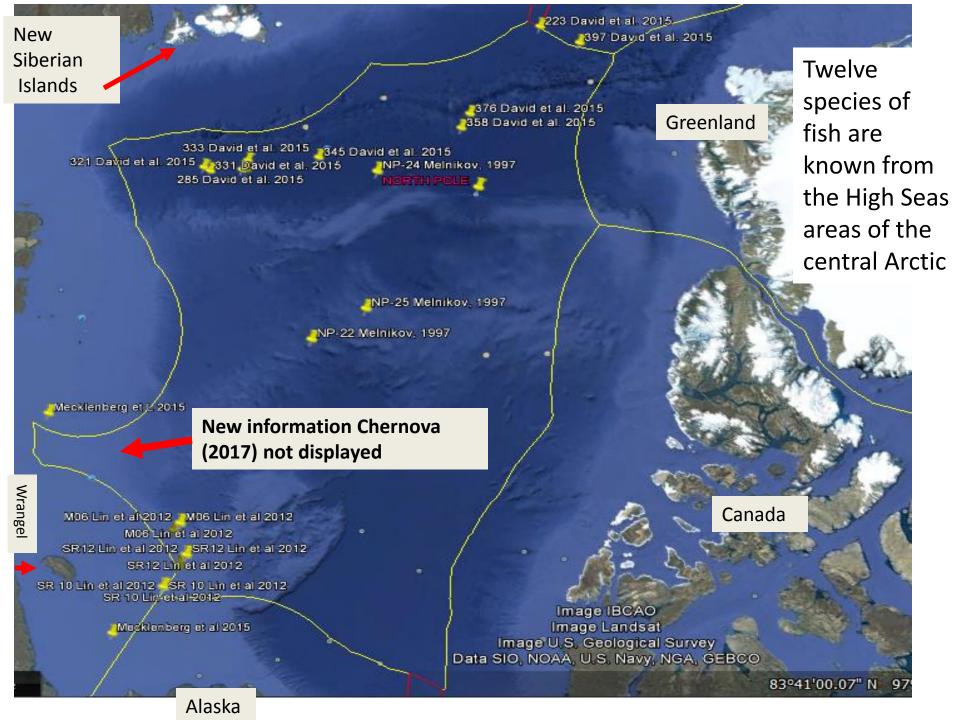
SCULPINS (2)



EELPOUTS (5)



CODS (2)



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Nations should work to find agreement on data management policies that would permit sharing of all monitoring and research data. Adhering to open data policies would enable the best and fastest scientific results. Potentially suitable data management policies are already available (e.g., DBO, SAON and IASC, ICES). Such policies could include guarantees for data QA/QC, standard formats and procedures for metadata, and protocols for data exchange (interoperability) that enable data processing independent of software and hardware limitations. Contributing nations would be asked to participate in developing a "distributed" data management system. Distributed systems leave the data and their maintenance to the originator. Distributed systems have search and query capabilities available that can quickly navigate fisheries and ecosystem data in order to aggregate data according to search criteria designed for specific analytic purposes. Copies of the databases would be held by the originator, and potentially by national archives, and third parties such as ICES and AOOS. In the case of third party storage, public data sharing limitations and protocols would be needed. More information on data management is available from the third Fiscao meeting (Pulsifer, 2015).

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